Concordia University

Assignment 2:

P+7 (Oulipian Language Modelling)

Short Essay

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CART 498 - GENERATIVE ARTIFICIAL INTELLIGENCE

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Impact of Adjusting X

Given the probabilistic nature of the model, increasing X causes the final word of each sentence to fit less contextually, resulting in a progressively more nonsensical poem. Since sentences are tokenized, this sometimes results in partial words (e.g., “longn,” “phosph,” “ful”). Additionally, the output begins to include more proper nouns (e.g., “Nielsen,” “Anaheim,” “Pier”).

Approach for Replacing All Nouns

1. Identify Nouns: Use a natural language processing (NLP) tool to detect and tag all nouns in the text. Store the position (index) of each noun in their respective sentence.
2. Iterate Through Sentences: Process each sentence one by one.
3. Extract Context for Each Noun: For each noun in the sentence:
    a. Remove the noun and all words that appear after it in the sentence, leaving only the preceding words as context.
4. Run the Model: Pass this context through a language model to predict the next word probabilities.
5. Select the 7th-Highest Probability Word: Identify the word with the seventh-highest probability in the model’s predictions. Replace the original noun with this new word.
6. Repeat the Process: Continue iterating through the sentence, moving to the next noun, and repeat steps 3–5 until all nouns in the sentence have been replaced.
7. Finalize the Output: Combine the modified sentences to form the updated text.